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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,935	02/04/2002	Fouad D. Mehawej	DA-047-US-01	4239

7590 09/28/2009
Julie Post
H.B. Fuller Company
1200 Willow Lake Blvd.
P.O. Box 64683
St. Paul, MN 55164-0683

EXAMINER

STEPHENS, JACQUELINE F

ART UNIT	PAPER NUMBER
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3761

MAIL DATE	DELIVERY MODE
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09/28/2009

PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte FOUAD D. MEHAWEJ

Appeal 2009-003726
Application 10/066,935
Technology Center 3700

Decided: September 28, 2009

Before TONI R. SCHEINER, RICHARD M. LEBOVITZ, and
JEFFREY N. FREDMAN, *Administrative Patent Judges*.

SCHEINER, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 2-35, 37, 39, and 42-48. We have jurisdiction under 35 U.S.C. § 6(b).

STATEMENT OF THE CASE

Claim 44 is representative of the subject matter on appeal:

44. A disposable diaper having a core that comprises a composite comprising:

superabsorbent polymer; and
a high loft nonwoven web comprising fibers,
said nonwoven web being impregnated with said superabsorbent polymer,

said superabsorbent polymer having been formed in situ in said nonwoven web by impregnating said nonwoven web with an aqueous superabsorbent polymer precursor composition and drying said aqueous superabsorbent polymer precursor composition to form a superabsorbent polymer throughout the three dimensional matrix of said nonwoven web including along the length of the fibers of said nonwoven web and in the interstices of said nonwoven web,

said composite comprising from 10% by weight to about 90% by weight superabsorbent polymer.

The Examiner relies on the following evidence:

Abuto	US 5,788,684	Aug. 4, 1998
Chmielewski	US 6,068,620	May 30, 2000
Chmielewski	US 2003/0105441	Jun. 5, 2003

The Examiner rejected the claims as follows:

- (A) Claims 2-10, 18-20, 26-30, 32-34, 37, 44, 45, and 47 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a) as unpatentable over Chmielewski '620.
- (B) Claims 11-17, 21-25, 31, 38, and 46 under 35 U.S.C. § 103(a) as unpatentable over Chmielewski '620.
- (C) Claim 35 under 35 U.S.C. § 103(a) as unpatentable over Chmielewski '620 in view of Abuto.
- (D) Claim 48 under 35 U.S.C. § 103(a) as unpatentable over Chmielewski '620 in view of Chmielewski '441.

We affirm-in-part.

ANTICIPATION/OBVIOUSNESS

Issue (A)

The Examiner has rejected claims 2-10, 18-20, 26-30, 32-34, 37, 44, 45, and 47 as anticipated by, or obvious over Chmielewski '620 (Ans. 4-6).

The threshold issue raised by this rejection is whether the Examiner has provided sufficient evidence to establish a prima facie case that Chmielewski '620 describes or suggests a diaper with a composite core that is structurally indistinguishable from the claimed composite core - despite being produced by a different process - thereby shifting the burden of proof to Appellant to prove that the cores are structurally different. If so, the residual issue is whether Appellant's burden has been met.

Findings of Fact

FF1 Independent claim 44 is directed to a disposable diaper with a composite core comprising a high loft nonwoven fibrous web and from 10% to about 90% by weight superabsorbent polymer (SAP), where the composite core is made by impregnating the nonwoven web with an aqueous superabsorbent polymer precursor composition and drying the composition to form a superabsorbent polymer throughout the three dimensional matrix of the nonwoven web, "including along the length of the fibers of said nonwoven web and in the interstices of said nonwoven web".

FF2 According to the Specification, the nonwoven web "can be formed using a variety of methods including e.g., air-laying, [and] wet laying" (Spec. 8: 8-9), and "includes synthetic polymer fibers of, e.g.,

polyester, polyolefin (e.g. polypropylene, polyethylene, and copolymers of polyolefins and polyesters), polyamide, polyurethane, polyacetonitrile, and combinations thereof including copolymers thereof” (*id.* at 8: 1-4).

FF3 The Specification teaches that “[t]he superabsorbent polymer is applied to the high loft web in the form of an aqueous composition, which . . . can be dried according to various methods including, e.g., with air, heat or a combination thereof” (Spec. 6: 6-19).

FF4 “The aqueous composition includes a superabsorbent polymer precursor . . . and a crosslinking agent. As the aqueous composition dries, the superabsorbent polymer precursor crosslinks to form the superabsorbent polymer” (Spec. 6: 22-24).

FF5 Claim 44 does not require a crosslinking agent.

FF6 Chmielewski ‘620 describes a disposable diaper with a core comprising a central absorbent laminate 340 made from a composite of a fibrous or particulate superabsorbent polymer and at least one other fibrous component (Chmielewski ‘620, col. 11, l. 47 to col. 12, l. 8). Laminate 340 comprises 50-95% superabsorbent polymer by weight (*id.*).

FF7 The fibrous component of central absorbent laminate 340 preferably includes cellulose acetate fibers, polyacrylonitrile fibers, polyester fibers, polyolefin/polyester bicomponent fibers, etc. (Chmielewski ‘620, col. 11, ll. 56-62).

FF8 In addition, “about 1-10% . . . by weight of thermally bondable synthetic fibers can be added to the central laminate 340 to impart additional wet strength . . . The preferred synthetic fibers are polyolefin/polyester fibers and polyester/polyester bicomponent fibers” (Chmielewski ‘620, col. 12, ll. 59-65).

FF9 Chmielewski '620 teaches that "laminate 340 can be made using . . . conventional wet-laid nonwoven processes" such as coating a porous substrate (e.g., wire mesh) with a solvent/water-based suspension of the fibrous component (including thermally bondable fibers) and the superabsorbent polymer, removing most of the water with a suction dewatering device, rolling the dewatered composite between upper and lower layers of tissue or a synthetic nonwoven web, and oven drying it, thereby bonding the thermally bondable fibers in the wet laid middle layer, and in the upper and lower layers (Chmielewski '620, col. 14, ll. 28 to col. 15, l. 3).

FF10 The ordinary meaning of the transitive verb "impregnate" is "to cause to be filled, imbued, permeated or saturated <impregnate wood with varnish> . . . to permeate thoroughly".¹

Principles of Law

The initial burden of establishing unpatentability rests on the Examiner. *In re Oetiker*, 977 F.2d 1443, 1446 (Fed. Cir. 1992). Nevertheless, there are exceptions where the record justifies shifting the burden to appellant to show a difference between the claimed invention and the prior art. As explained in *In re Best*, 562 F.2d 1252, 1254-1255 (CCPA 1977):

[W]here the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to

¹ Definition of "impregnate, accessed August 24, 2009, at <http://www.merriam-webster.com/dictionary/impregnate>

require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.

“Whether the rejection is based on ‘inherency’ under 35 U.S.C. § 102, on ‘prima facie obviousness’ under 35 U.S.C. § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO’s inability to manufacture products or to obtain and compare prior art products.” *Id.* at 1255. “[W]hen the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.” *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990).

Moreover, “[t]he patentability of a product does not depend on its method of production. If the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 697 (Fed. Cir. 1985) (citation omitted).

Analysis

The Examiner finds that Chmielewski ‘620 discloses an absorbent article with composite core comprising a high loft nonwoven web and up to 80% by weight of a superabsorbent polymer, where the superabsorbent polymer is present throughout the web (Ans. 11).

Appellant contends that the claimed and prior art composite cores are made by different processes, resulting in articles that are “inherently different” (App. Br. 13). Appellant contends that, according to the process language of claim 44, the claimed composite core is formed in situ by impregnating a nonwoven web with an aqueous superabsorbent polymer precursor composition, and drying the composition so that the resultant

superabsorbent polymer impregnates the web and forms “an essentially continuous phase throughout the web including along the length of the fibers and the interstices of the fibers” (App. Br. 12, 14).

Appellant contends that Chmielewski ‘620 “discloses a laminate that includes a central absorbent layer formed by combining superabsorbent polymer and fibers, and then forming a layer from the mixture” (App. Br. 10). Appellant contends that the superabsorbent polymer “is incorporated simultaneously with the formation of the web in of Chmielewski [‘620]” (*id.* at 14), and “[t]he resulting layer includes discrete particulate or fibrous SAP strewn throughout the layer . . . [which] would normally tend to migrate out the side edges . . . of the central absorbing layers” (*id.* at 10), if not “locked within the absorbent layer . . . due to the pore size of the fibrous additive” (*id.* at 11). Appellant contends that Chmielewski ‘620’s resultant layer is not impregnated with the superabsorbent polymer, in other words, “the presence of the SAP as discrete, individual superabsorbent particles or fibers in the layer does not constitute superabsorbent polymer formed throughout the three dimensional matrix of the nonwoven web including along fibers of the nonwoven web and in the interstices of the nonwoven web” (*id.* at 11).

Appellant’s arguments are not persuasive. It’s true that the claimed core is recited in the claim to be made by impregnating a preformed nonwoven fibrous web with an aqueous solution of a superabsorbent polymer precursor, and drying it, while Chmielewski ‘620’s core is made by drying and rolling a solvent/water-based suspension of the fibrous component (including thermally bondable fibers) and the superabsorbent polymer. However, Appellant has not established that the fibrous component in Chmielewski ‘620’s rolled and dried core is not in the form of

a nonwoven web, especially in those cores with thermally bondable fibers. Indeed, as discussed above, Appellant acknowledges that Chmielewski '620 incorporates superabsorbent polymer into the core "simultaneously with the formation of the web" (App. Br. 14). As to the "having been formed in situ . . . by impregnating" limitation, we note that a process limitation in a product claim cannot establish novelty for a product that is otherwise described in the prior art. *SmithKline Beecham Corp. v. Apotex Corp.*, 439 F.3d 1312 (Fed. Cir. 2006).

Moreover, the fact that the superabsorbent polymer in Chmielewski '620's core is mobile has nothing to do with whether the three dimensional matrix of the nonwoven web is impregnated with the superabsorbent polymer "including along the length of the fibers of said nonwoven web and in the interstices of said nonwoven web," as required by claim 44. The ordinary meaning of impregnate is simply "to cause to be filled, imbued, permeated or saturated . . . to permeate thoroughly" (FF10). Again, Chmielewski '620's product is made from a solvent/water-based suspension of the fibrous component (including thermally bondable fibers) and the superabsorbent polymer (FF9), i.e., a mixture in which the components would reasonably be expected to be uniformly distributed. Appellant has not explained why the superabsorbent polymer would not be uniformly distributed (i.e., permeating) throughout the three dimensional matrix of the core/web in the finished product as well.

Finally, to the extent Appellant implies that Chmielewski '620's finished core is inherently different from the claimed product because the superabsorbent polymer is not crosslinked around the fibers of the nonwoven web, we acknowledge that Appellant's Specification discloses an

embodiment wherein the absorbent core is made from an “aqueous composition [that] includes a superabsorbent polymer precursor . . . and a crosslinking agent” (FF4), but claim 44 does not require a crosslinking agent (FF5).

Conclusions of Law

The Examiner has provided sufficient evidence to establish a prima facie case that Chmielewski ‘620 describes or suggests a diaper with a composite core that is structurally indistinguishable from the claimed composite core - despite being produced by a different process - properly shifting the burden of proof to Appellant to prove that the cores are structurally different. Appellant’s burden has not been met by argument or evidence.

OBVIOUSNESS

Issue (B)

The Examiner has rejected claims 11-17, 21-25, 31, 38, and 46 as unpatentable over Chmielewski ‘620 (Ans. 7-10).

The issue raised by this rejection is whether the Examiner has established that a diaper with a composite core comprising a nonwoven web with a density of less than 0.01 g/cm³, or less than 0.008 g/cm³ would have been obvious over Chmielewski ‘620.

Analysis & Conclusions of Law

It is undisputed that Chmielewski ‘620 does not disclose the density of the nonwoven web in the finished composite cores. The Examiner’s position is that discovering the optimum or workable ranges for the density of the web involves only routine skill in the art (Ans. 7-8).

Appellant contends that Chmielewski '620 "discusses density with respect to the overall density of the laminate construction" which includes both the nonwoven web and the superabsorbent polymer (App. Br. 15), but "fails to recognize that the density of a nonwoven web starting material is important in optimizing the absorbency of a composite made therefrom or that density of a nonwoven web is a variable to be optimized" (*id.* at 17). Appellant identifies disclosure in the Specification demonstrating that "high loft nonwoven webs (i.e., a nonwoven web having a density no greater than 0.01 g/cm³) with relatively less superabsorbent polymer can absorb more water than more dense nonwoven webs with relatively more superabsorbent polymer" (App. Br. 16).

The Examiner has not responded to Appellant's evidence in any way. Therefore, we agree with Appellant that the Examiner has not established that a diaper with a composite core comprising a nonwoven web with a density of less than 0.01 g/cm³, or less than 0.008 g/cm³ would have been obvious over Chmielewski '620.

Accordingly, the rejection of claims 11-17, 21-25, 31, 38, and 46 as unpatentable over Chmielewski '620 is reversed.

Issue (C)

The Examiner rejected claim 35 as unpatentable over Chmielewski '620 and Abuto.

The issue raised by this rejection is whether the Examiner has established that a diaper with a composite core comprising a plurality of strips of composite would have been obvious over Chmielewski '620 and Abuto.

Analysis & Conclusions of Law

Appellant contends that claim 35 depends from claim 44, and therefore incorporates all of the limitations of claim 44. Appellant contends that Abuto “do[es] not cure the deficiencies of Chmielewski [‘620]” and therefore “lacks a required element of claim 35” (App. Br. 19).

Nevertheless, as discussed above, the Examiner has established a prima facie case that Chmielewski ‘620 describes or suggests a diaper meeting the limitations of claim 44, which Appellant has not overcome by argument or evidence.

Accordingly, the rejection of claim 35 as unpatentable over Chmielewski ‘620 and Abuto is affirmed.

Issue (D)

The Examiner has rejected claim 48 as unpatentable over Chmielewski ‘620 in view of Chmielewski ‘441.

Additional Findings of Fact

FF11 Claims 48 was entered by amendment on November 17, 2005.

FF12 Chmielewski ‘441 was applied against claim 48 in the Final Rejection mailed February 10, 2006, and had not previously been cited against any claim in the application.

FF13 Appellant submitted a declaration under the provisions of 37 C.F.R. § 1.131 (Declaration of Fouad D. Mehawej, on April 7, 2006) to establish that Chmielewski ‘441 is not available as prior art against the claimed invention.

FF14 The Examiner declined to enter or consider the declaration in the Advisory mailed April 26, 2006, but did discuss another declaration filed the same day under the provisions of 37 C.F.R. § 1.132.

FF15 Appellant filed an Appeal Brief on July 10, 2006.

FF16 In response to the Appeal Brief, the Examiner reopened prosecution on October 31, 2007, but still did not consider the 37 C.F.R. § 1.131 declaration. This appeal ensued.

Analysis

Appellant has submitted a declaration under the provisions of 37 C.F.R. § 1.131 (Declaration of Fouad D. Mehawej, filed May 10, 2006) to establish that Chmielewski '441 is not available as prior art against the claimed invention.

The Examiner has not responded to the declaration or otherwise acknowledged it, despite having reopened prosecution after the Declaration was originally submitted.

Accordingly, the rejection of claim 48 as unpatentable over Chmielewski '620 in view of Chmielewski '441 is reversed.

SUMMARY

- (A) The rejection of claims 2-10, 18-20, 26-30, 32-34, 37, 44, 45, and 47 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a) as unpatentable over Chmielewski '620 is affirmed.
- (B) The rejection of claims 11-17, 21-25, 31, 38, and 46 under 35 U.S.C. § 103(a) as unpatentable over Chmielewski '620 is reversed.
- (C) The rejection of claim 35 under 35 U.S.C. § 103(a) as unpatentable over Chmielewski '620 in view of Abuto is affirmed.

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- (D) The rejection of claim 48 under 35 U.S.C. § 103(a) as unpatentable over Chmielewski '620 in view of Chmielewski '441 is reversed.

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv)(2006).

AFFIRMED-IN-PART

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JULIE POST
H.B. FULLER COMPANY
1200 WILLOW LAKE BLVD.
P.O. BOX 64683
ST. PAUL, MN 55164-0683